

FACT SHEET

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-1214

Permit No.: AK-000039-6

PROPOSED REISSUANCE OF A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE POLLUTANTS PURSUANT TO THE PROVISIONS OF THE CLEAN WATER ACT (CWA) FOR

Cook Inlet Pipeline Company
Drift River Terminal
2000 W. International Airport Road, D-6
Anchorage, Alaska 99502

This fact sheet includes (a) the tentative determination of the Environmental Protection Agency (EPA) to reissue the permit, (b) information on public comment, public hearings and appeal, (c) the description of the industry and proposed discharges, and (d) other conditions and requirements.

Persons wishing to comment on the tentative determinations contained in the proposed permit may do so before the expiration date of the Public Notice. All written comments should be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

After the expiration date of the Public Notice, the Director, Office of Water, will make final determinations with respect to reissuance of the permit. The tentative determinations contained in the draft permit will become final conditions if no substantive comments are received during public comment period.

The permit will become effective 30 days after the final determination is made, unless a request for an evidentiary hearing is submitted within 30 days after receipt of the final determination. An evidentiary hearing request must meet all the requirements of 40 CFR 124.74 and set forth material issues of fact relevant to the permit issuance.

The proposed NPDES permit and other related documents are on file and may be inspected and copies made at the above address any time between 8:30 a.m. and 4:00 P.M., Monday through Friday. Copies and other information may be requested by writing to EPA at the above address to the attention of the NPDES Permits Unit, or by calling (206) 553-1214. This material is also available from the EPA Alaska Operations Office, Room 537, Federal Building, 222 West 7th Avenue, Anchorage, Alaska 99513-7588 or Alaska Operations Office, 410 Willoughby Avenue, Suite 100, Juneau, Alaska 99801 or the Alaska Department of Environmental Conservation (ADEC), Watershed Management Section, 555 Cordova Street, Anchorage, Alaska 99501.

TECHNICAL INFORMATION

A. APPLICANT

Cook Inlet Pipeline Company (CIPL)
Drift River Terminal.
2000 W. International Airport Road, D-6
Anchorage, Alaska 99502

A renewal application was submitted April 29, 1992 and an updated application was received on November 19, 1995. A letter dated December 15, 1997, provides clarification for information provided in the most recent application.

B. ACTIVITY

The purpose of the Drift River Terminal is to serve as a shipping point for crude oil produced in Cook Inlet (see figure 1). The Cook Inlet Pipe Line brings crude oil from production facilities on the west side of Cook Inlet to storage tanks at the Drift River Terminal. The oil is then transferred to tanker ships via buried pipeline to an offshore loading platform. Two discharges have been associated with this activity: treated ballast water from an onshore treatment facility and domestic wastewater from the offshore loading platform, Christy Lee. The current permit application package requests that a discharge of sanitary wastewater from the Christy Lee be permitted.

1. Ballast Water Treatment System — Outfall 001
Latitude 60°34'43" Longitude 152°08'18"

The main, and most routine, source of wastewater to the system is ballast water from tankers. Seven other sources are identified in the permit application. The first group contains three types of water: hydrostatic test water, pipeline displacement water and breakout tank ballast water. These three types of water are only generated when repairs, maintenance or inspections are conducted on various pieces of equipment. The fourth type is purge water from monitoring wells. Water collected each time from groundwater monitoring wells are sampled and are stored separately in drums until lab analyses are complete. The water from the drums would be treated in the ballast water treatment system if the only contamination of the water was crude oil contamination. Stormwater and groundwater collected during maintenance projects is the fifth type of source water. This water, if contaminated by crude oil, would be collected and routed through the treatment system if repairs or maintenance of underground equipment is needed. Spill response water and groundwater remediation, the last two types of source water, are for contingency purposes. Spill response water

would be generated in the event that a spill or release of crude oil occurs in Cook Inlet. This source would be the decanted water from oil spill response vessels deployed to collect spilled crude oil in Cook Inlet. There are no groundwater remediation projects underway at this time. However, the facility wishes to include the potential for treating this water in the proposed permit.

The ballast water treatment system has been upgraded since the issuance of the last permit. The system no longer uses six surface impoundments. The surface impoundments have been closed in accordance with the Resource Conservation and Recovery Act (RCRA) requirements.

The current ballast water treatment system (see figure 2) begins in the 90,000 barrel ballast water storage tank. When tankers arrive with ballast, the ballast is off loaded and initially stored in the ballast water storage tank for a minimum of 24 hours. This allows for gravity separation of the liquid phases in the ballast water. The separated oil is collected from the ballast tank and routed back to a breakout storage tank. The underlying water is routed to one of two dissolved air floatation (DAF) tanks. The oil skimmed from the DAF unit also goes into a breakout storage tank and the water is then routed to an oil water separator. Like the oil collected from the ballast storage tank and the DAF unit, any oil collected in the oil water separator is routed to a breakout storage tank and is later loaded back onto a tanker. After the oil water separator, the water is routed to an air stripper.

There are six activated carbon vessels that are used to polish the ballast before discharge. The water exiting the carbon vessels is continuously monitored with a gas chromatograph. The gas chromatograph is calibrated before each batch of ballast is processed and has an alarm which is set at 5 ppb (the limit in the proposed permit is 10 ppb for Total Aromatic Hydrocarbons).

The designed flow rate for the treatment system is 200 gallons per minute for a maximum of approximately 300,000 gallons per day. After the carbon vessels, the ballast is discharged through outfall 001 to an unnamed ditch.

2. Sanitary and Domestic Wastewater — Outfall 002
Latitude 60°33'19.3" Longitude 152°08'2.7"

Up to four people occupy the quarters on the loading platform during loading operation. Domestic wastewater is generated from showers, sinks, galleys and laundries. These discharges will mostly be contaminated with minor amounts of domestic cleansers. Sanitary wastewater has previously been disposed of in an incinerator toilet which incinerates the wastes

electrically. The facility has requested that the permit include a discharge from a different type of marine sanitation device which does not incinerate the waste. The sanitary wastewater would be commingled with the domestic wastewater and discharged through the existing outfall 002.

C. RECEIVING WATERS

In a letter from the Alaska Department of Environmental Conservation (ADEC) to CIPL dated November 6, 1989, ADEC determined that there is a hydrologic connection between the ditch that the effluent flows through and the groundwater. ADEC designated the ditch as a water of the State. Compliance with the Alaska Water Quality Standards (WQS) found in 18 AAC 70 would be required prior to entering the ditch.

The ditch is classified in 18 AAC 70 as Classes (1)(A), (B), (C), and (D) for use in drinking, culinary, and food processing, agriculture, aquaculture, and industrial water supply; contact and secondary recreation; and growth and propagation of fish, shellfish, other aquatic life and wildlife.

Redoubt Bay is classified in 18 AAC 70 as Classes (2)(A), (B), (C), and (D) for use in water supply (aquaculture, seafood processing and industrial), water recreation (contact and secondary), growth and propagation of fish, shellfish, other aquatic life and wildlife, and harvesting for consumption of Raw Mollusks or other raw aquatic life.

D. OCEAN DISCHARGE CRITERIA EVALUATION

EPA has prepared a document entitled "Ocean Discharge Criteria Evaluation for Cook Inlet (Oil and Gas Lease Sale 149) and Shelikof Strait" (ODCE). Since the proposed permit is for a facility in an area the document has evaluated, EPA is proposing to use this document to satisfy the requirements of Section 403 of the Act. The discharges contained in the proposed permit that flow to marine waters are sanitary and domestic wastewater from the Christy Lee Platform.

The ODCE directly addresses the discharge of sanitary and domestic wastewaters. Sanitary discharges in this proposed general permit are required be treated by a Coast Guard approved marine sanitation device (MSD). Domestic wastewater discharges are not measured analytically but are not expected to produce substantial pollutant loading. Neither of these discharges are expected to have a detrimental effect on the marine environment especially considering the sporadic nature of the discharge.

E. BACKGROUND

The Cook Inlet Pipe Line Company ballast water treatment facility is an existing discharge which was first issued an NPDES permit in December 1973. The permit was reissued in September 1979 and in September 1987 then modified in September 1988. That permit expired on October 29, 1992, but has remained in effect having been continued under the Administrative Procedures Act.

In April of 1997, the EPA issued an administrative penalty complaint against the Cook Inlet Pipeline Company for violations of its National Pollutant Discharge Elimination System (NPDES) permit. The water discharge from the facility exceeded the permit limits for total hydrocarbon, pH, oil/grease, Total Suspended Solids and BETX on 35 occasions spanning a period from 1992 to 1996. A penalty of \$120,000 was proposed. EPA and the facility agreed to settle the complaint through a Consent Order in November 1997. The facility agreed to pay a penalty of \$98,000.

F. STATUTORY BASIS FOR EFFLUENT LIMITATIONS

Sections 301(b), 304, 308, 401 and 402 of the Clean Water Act provide the basis for the effluent limitations and permit conditions contained in the draft permit. The general requirements of this sections are discussed below. A discussion of the derivation of specific effluent limitations follows in Part G.

1. **Technology-Based Limitations**

a. *Regulatory Requirements*

By July 1, 1984, all permits were required by Section 301(b)(2) of the Act to contain effluent limitations which: (1) control toxic pollutants (40 CFR § 401.15) by means of the best available technology economically achievable (BAT), and (2) represent best conventional pollutant control technology (BCT) for all categories and classes of point sources. BCT effluent limits apply to conventional pollutants (pH, BOD, oil and grease, suspended solids and fecal coliform). Permits were required to impose effluent limitation which control nonconventional pollutants by means of BAT no later than July 1, 1987.

BAT and BCT guidelines have not been proposed for discharge from ballast water treatment plants associated with transshipment terminals. In the absence of effluent guidelines, permit conditions must be established using best professional judgment (BPJ) procedures (40 CFR §§ 122.43, 122.44 and 125.3). Therefore, this permit incorporates BAT and BCT effluent limitations based on Region 10's best professional judgement.

BAT and BCT guidelines have been promulgated for treated ballast water discharge from petroleum refining point sources in 40 CFR Part 419, Subpart A. BCT limits were determined to be:

	Daily Maximum	Monthly Average
BOD ₅ , mg/L	48	26
TSS, mg/L	33	21
Oil & Grease, mg/L	15	8
pH shall be between 6 and 9 standard units		

BAT was set at 470 mg/L and 240 mg/L COD for maximum daily and monthly average limits, respectively. These limits were based on initial oil water separation, further oil separation (clarifiers, dissolved air flotation), biological treatment and finishing treatment (filtration, activated carbon system).

b. *BPJ Determination*

EPA previously evaluated whether BAT/BCT effluent limitations for the CIPL should be based on improved treatment requiring additional treatment processes. EPA has determined that the current operating performance (January 1992 to December 1997) of this facility should serve as a basis for BAT/BCT effluent limitations. This determination is based on the following considerations:

i. Age of equipment and facilities, processes involved.

The ballast water treatment plant is approximately 30 years old. Additions to the treatment process (described below) make the current treatment process nearly equivalent to that considered BAT/BCT for petroleum refining point sources. The facility has achieved effluent concentrations of oil and grease and TSS within the BAT/BCT limits promulgated for the petroleum refining point source category.

ii. Engineering aspects of the application of various types of control techniques; process changes

The facility has added carbon adsorption and air stripping to their treatment process. At this time, no other potential treatment methods are being considered as a basis for BAT at this particular facility.

Regarding removal of conventional pollutants, no technology

performance data available to Region 10 indicate that more stringent limitations based on other technologies are appropriate at this time.

iii. **Cost Considerations**

Since Region 10's determination that the currently utilized treatment technology is nearly equivalent to BAT/BCT treatment for this facility, there is no incremental cost involved in attaining the technology-based limits of the proposed permit.

2. Water Quality Based Limits

In addition to the technology-based effluent limitations, the permit includes effluent limitations which are required to ensure compliance with WQS. These standards vary with the beneficial use they are established to protect. In water bodies with more than one designated beneficial use, the more restrictive criteria apply.

G. SPECIFIC EFFLUENT LIMITATIONS

1. Ballast Water Treatment System — Outfall 001

- a. *Discharge Flow Rate* — EPA proposes, as requested by the permittee, to set the discharge flow rate limitation at the design rate of 300,000 gallons per day for the ballast water treatment facility at Drift River Terminal.
- b. *Oil and Grease* — Oil and grease is a conventional pollutant controlled under BCT. Using the EPA method for calculating permit limits at a 95th percentile based on the long-term mean and coefficient of variation of available data (U.S. EPA, March 1991), possible permit limits were calculated (the theoretical 95th percentiles). This method assumes a lognormal distribution of effluent concentrations which may not perfectly represent the actual situation. A comparison with actual operation data, based on BPJ, shows that these newly calculated limits correlate fairly well with the operating data over the last five years (See Figure 3). The proposed limits have, therefore, been adjusted to a level which would have been exceeded less than 5% of the time. The following table displays the oil and grease limits calculated by the Technical Support Document method in the first column and, in the second column, the levels which the actual data support as being exceeded less than 5% of the time.

95th Percentile concentrations (mg/L)		
	Theoretical	Actual
Maximum	4.18	4.94
Monthly average	1.97	1.99

The draft permit proposes oil and grease limits for the maximum and monthly average discharge concentrations equal to 5 mg/L and 2 mg/L, respectively. These are lower than the limits in the previous permit, 9 and 7 mg/L.

- c. *Petroleum Hydrocarbons* — The WQS is most restrictive for the use of Water supply- aquaculture. It says that total aqueous hydrocarbons (TAqH) may not exceed 15 µg/L in the water column. Concentrations of TAqH must be determined and summed using a combination of EPA Method 602 (plus Xylenes) to quantify monoaromatic hydrocarbons and EPA Method 610 to quantify polynuclear aromatic hydrocarbons. Total aromatic hydrocarbons (TAH) may not exceed 10 µg/L. Concentrations of TAH will be determined by EPA Method 602 (plus Xylenes). The WQS also require that surface waters and adjoining shorelines be free from floating oil, film, sheen or discoloration.
- d. *Total Suspended Solids (TSS)* — TSS is a conventional pollutant appropriately regulated under a BCT limitation. The removal of suspended particulate material from the treated ballast water is accomplished at every step of the process used. It is Region 10's best professional judgment that the existing treatment system can achieve the proposed maximum daily TSS limit of 33 mg/L. This limit is equal to the daily maximum limit recommended by the guidelines for ballast water for Petroleum Refining Point Sources.
- e. *pH* — The previous permit contained a pH range of 6.5 to 8.5 standard units based on the state's § 401 Certification. This limitation will be retained in the current permit.
- f. *Whole Effluent Toxicity (WET)* — The state water quality standards require that an effluent discharged to water may not impart chronic toxicity to aquatic organisms at the point of the discharge [18 AAC 70.030]. Data does not exist to support the development of a WET limit at this time. The proposed permit will require the permittee to monitor for whole effluent toxicity, and this information will be used in the next permitting cycle to determine if a WET limit is required. In addition to monitoring, the permit also includes a trigger level for accelerated WET testing. If chronic toxicity, above the trigger level of

1 TU_C, is detected, additional testing will be required. The information collected will allow EPA to better determine compliance with the WQS.

- g. *Biochemical Oxygen Demand (BOD₅) and Chemical Oxygen Demand (COD)* — BOD₅ and COD were not limited in the previous permit based on BPJ. The level of BOD₅ reported in the permit application still supports this determination. Because of the level of COD reported, monitoring of COD has been added to the permit to determine if a need for an effluent limitation is indicated. This information will be collected to make a determination during the next permit issuance.

2. **Sanitary and Domestic Wastewater** — Outfall 002

- a. *Discharge flow rate* — In the previous five years the flow rate of 530 gallons per day (gpd) has never been exceeded but with the addition of the flow of sanitary wastewater, the flow limitation has been increased by 120 gpd to 650 gpd according to a request made by CIPL to ADEC in a letter dated February 27, 1998.
- b. *Residue* — Applicable state standards for residue state that the discharge "may not, alone or in combination with other substances or wastes, make water unfit or unsafe for use, or cause acute or chronic problem levels as determined by bioassay or other appropriate methods. May not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines, cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water . . . or upon adjoining shorelines" EPA has determined that for the discharge of domestic wastewater, prohibition of an oily sheen and the discharge of excess kitchen oils from food preparation will meet this criteria. For sanitary wastewater discharges, a restriction on floating solids and foam will suffice.

H. BASIS FOR MONITORING AND REPORTING REQUIREMENTS

EPA must include monitoring requirements in the permit to monitor compliance with effluent limitations pursuant to 40 CFR § 122.44(i)(1)(i). Effluent and ambient monitoring may also be required to gather data for future effluent limitations or monitor effluent impacts on receiving water quality. Flow monitoring is required pursuant to 40 CFR § 122.44(i)(1)(ii). Reporting requirements are pursuant to 40 CFR § 122.48.

I. BEST MANAGEMENT PRACTICES (BMPs)

It is national policy that, whenever feasible, pollution should be prevented or reduced at the source, that pollution which cannot be prevented should be recycled in an environmentally safe manner, and that disposal or release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner (Pollution Prevention Act of 1990, 42 U.S.C. 13101).

Pursuant to Section 402(a)(1) of the Clean Water Act, development and implementation of Best Management Practices (BMP) Plans may be included as a condition in NPDES permits. Section 402(a)(1) authorizes EPA to include miscellaneous requirements in permits on a case-by-case basis which are deemed necessary to carry out the provisions of the Act. BMPs, in addition to numerical effluent limitations, are required to control or abate the discharge of pollutants in accordance with 40 CFR § 122.44(k). The BMP Plan requirement has also been incorporated into this permit in accordance with EPA's Guidance Manual for Developing Best Management Practices (BMP) (EPA, October 1993).

The proposed permit requires the development and implementation of a BMP Plan which prevents or minimizes the generation of pollutants, their release, and/or potential release from the facility to the waters of the United States. The requirements of the general plan are outlined in the proposed permit.

In addition to the developing and implementing the BMP Plan, the operator is also required to certify that the BMP Plan is complete, on-site, and available upon request. Certification is required no later than six months after the effective date of the permit. The BMP Plan must be amended whenever there is a change in the facility or in the operation of the facility which materially increases the potential for an increase discharge of pollutants. The BMP Plan will become an enforceable condition of the permit; a violation of the BMP Plan is a violation of the permit.

J. QUALITY ASSURANCE PLAN

Under 40 CFR § 122.41(e), the permittee must properly operate and maintain all facilities which it uses to achieve compliance with the conditions of the permit. This regulation also requires the permittee to ensure adequate laboratory controls and appropriate quality assurance procedures.

The draft permit requires the permittee to submit, for review and approval by EPA and for review by ADEC, a quality assurance project plan (QAPP) to EPA within 90 days of the effective date of the permit. The plan is intended to address sampling techniques, sample preservation and shipment procedures, instrument

calibration and preventive maintenance procedures and personnel qualifications and training.

K. OTHER REQUIREMENTS

1. **Spill Prevention Control and Containment (SPCC) Plan**

Part III.C. of the proposed permit was established in accordance with Part 40 CFR 122.44(k)(3). The purpose of this requirement is to control the potential discharge of pollutants, resulting from fuel spills, from entering receiving waters.

2. **Endangered Species**

Letters were sent to U.S. Fish and Wildlife Service and the National Marine Fisheries Service on February 20, 1998, requesting a species list for the area of the facility.

3. **State Certification**

Section 301(b)(1)(C) of the Act requires that an NPDES permit contain conditions which ensure compliance with applicable State water quality standards or limitations. The limitations for TAqH, TAH and residue were established pursuant to WQS. Section 401 of the Act requires that States certify that Federally issued permits are in compliance with State law. No permits can be issued until the requirements of Section 401 are satisfied.

This draft permit is proposed for operations discharging to waters of the state of Alaska. A draft certification by the Alaska Department of Environmental Conservation is included in the draft permit package. The draft certification grants a waiver, in accordance with State Regulations 18 AAC 72.040(d), from secondary treatment standards for the discharge of sanitary wastewater from the Christy Lee Platform.

4. **Coastal Zone Management Act**

A determination that the activities allowed by this draft permit are consistent with the Alaska Coastal Management Plan must be made in accordance with the Coastal Zone Management Act before a permit will be issued.

5. **Length of Permit**

This permit expires five years from the effective date of the permit but may be administratively extended if the conditions of 40 CFR § 122.6(a) are

met.

REFERENCES

40 CFR 419 Subpart A. Petroleum Refining Point Source Category, Topping Subcategory.

U.S. EPA, Region 10. 1995.

Final Draft Ocean Discharge Criteria Evaluation For Cook Inlet (Oil and Gas Lease Sale 149) and Shelikof Strait. Prepared with the assistance of Tetra Tech, Inc., September 9, 1994 and revised by EPA January 1995.

U.S. EPA 1982.

Development Document for Effluent Limitations Guidelines and Standards for the Petroleum Refining Point Source Category. EPA 440/1-82/014

U.S. EPA 1991.

Technical Support Document for Water Quality-based Toxics Control. March 1991. EPA/505/2-90-001

Letter from Cook Inlet Pipeline Company to ADEC dated February 27, 1998, requesting a reduction of the treatment level and effluent limitations required by state regulations for sanitary effluent discharges.

Figure 3

Equations from the TSD:

$$MDL = LTA * e^{(z\sigma - 0.5\sigma)}$$

$z = 1.645$ for 95th percentile

$$\sigma^2 = \ln(CV^2 + 1)$$

CV (coefficient of variation) = 0.6

$$MDL = 4.18$$

$$AML = LTA * e^{(z\sigma - 0.5\sigma)}$$

$z = 1.645$ for 95th percentile

$$\sigma_n = \ln[(CV^2/n) + 1]$$

$n = 3$ (samples per batch)

$$AML = 1.97$$

The data shown is a compilation from the Discharge Monitoring Reports of the last five years. The calculations following the data were done in a Lotus spreadsheet.

Oil and Grease		
	Monthly Average	Daily Maximum
	1.67	2.7
	1.05	1.13
	1.02	1.13
	1.03	1.7
	1.5	3.51
	0.9	1
	1	1
	1	1
	1	1
	2.2	5.9
	3.5	15.4
	1	1.1
	1.34	1.72
	1.33	1.7
	1	1
	1	1
	1	1
	1.01	1.07
	1	1
	1	1
	1	1.02
	1	1.01
	1.06	1.38
	1.08	1.6
	1.08	1.8
	1.01	1.1
	1	1
	1	1
	1	1
Maximum	3.5	15.4
Minimum	0.9	1
Average	1.20	1.96
95 %-tile	1.99	4.94